

# Antenna

# YE0042AA Datasheet

**Antenna Services**

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Status: Preliminary



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# About the Document

## Revision History

Version	Date	Author	Note
-	2020-11-30	Kenny YIN	Creation of the document
1.0	2020-11-30	Kenny YIN	First official release
2.0	2021-04-26	Aria CHU	Updated all test data in the datasheets.
2.1	2023-01-04	Aria CHU	Deleted the IP rating (Chapter 3).
2.2	2024-05-20	Rainey LIAO	Updated gain data (Chapter 4.4).

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## 1 Product Description

This Quectel external 4G antenna covers main 4G LTE bands and is compatible with 3G/2G/LPWA bands as well. The external antenna is barely influenced by the internal environment of devices, giving a much better performance in efficiency, radiation and gain whilst providing an optimized solution for a customer product. Quectel also offers flexible installation with custom cable length and connector options.

## 2 Product Features

- Cellular LTE
- High efficiency
- Excellent performance



### 3 Product Specifications

#### Passive Electrical Specifications

Frequency Range	700–2700 MHz
Input Impedance	50 $\Omega$
VSWR	$\leq 2.0$
Gain	$\leq 3.0$ dBi
Polarization Type	Linear

#### Mechanical Specifications

Antenna Size	158 mm x 17.60 mm x 13 mm
Casing	ABS
Connector Type	SMA Male (center pin)
Working Temperature	-20°C to +80°C
Radome Color	Black

## 4 Overall Performance

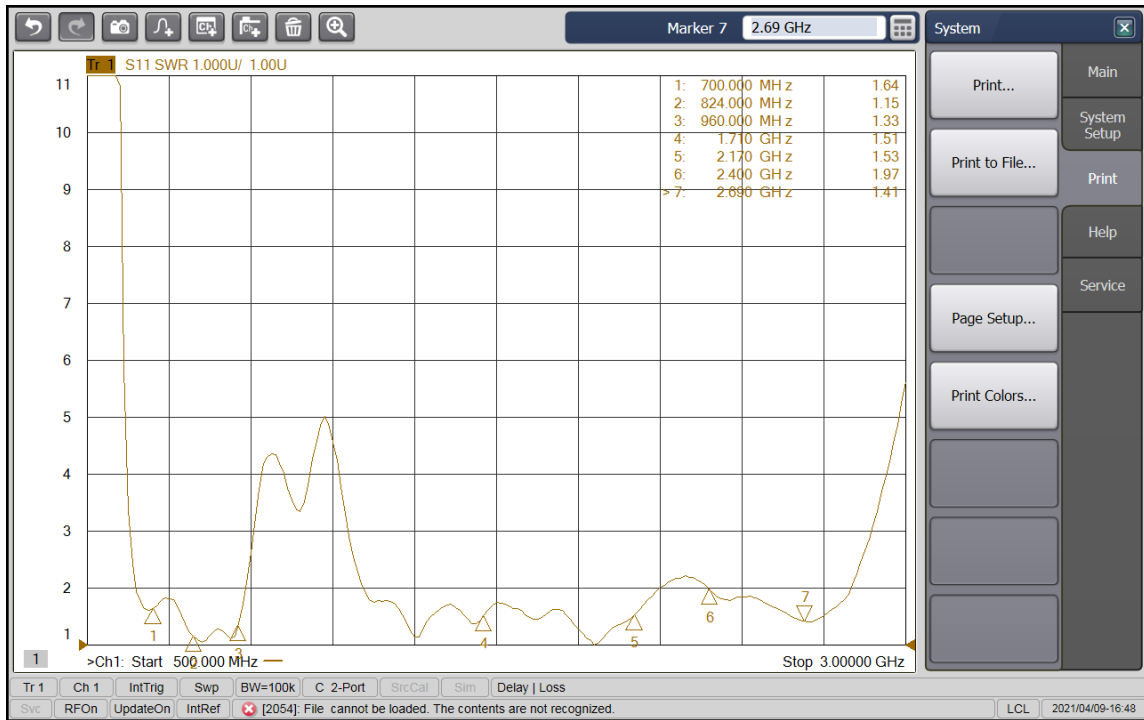
### 4.1. Test Environment

- KEYSIGHT ENA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 600 MHz – 8.5 GHz



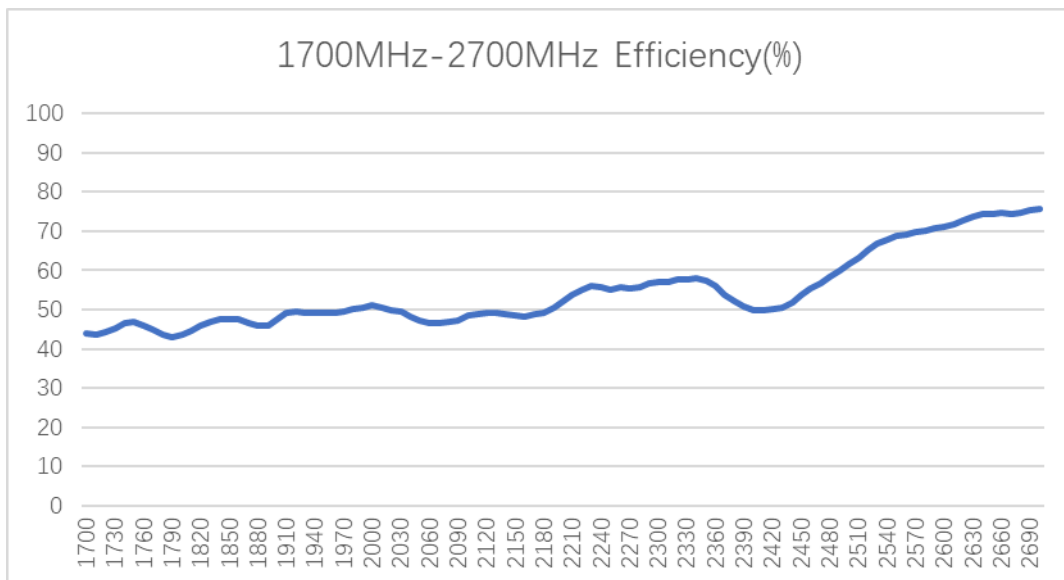
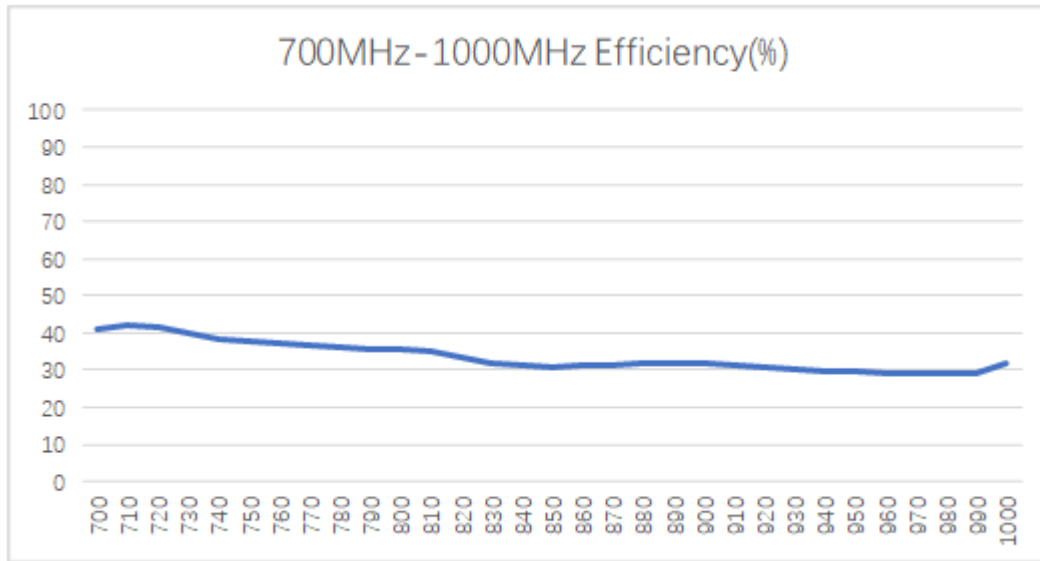


## 4.2. VSWR



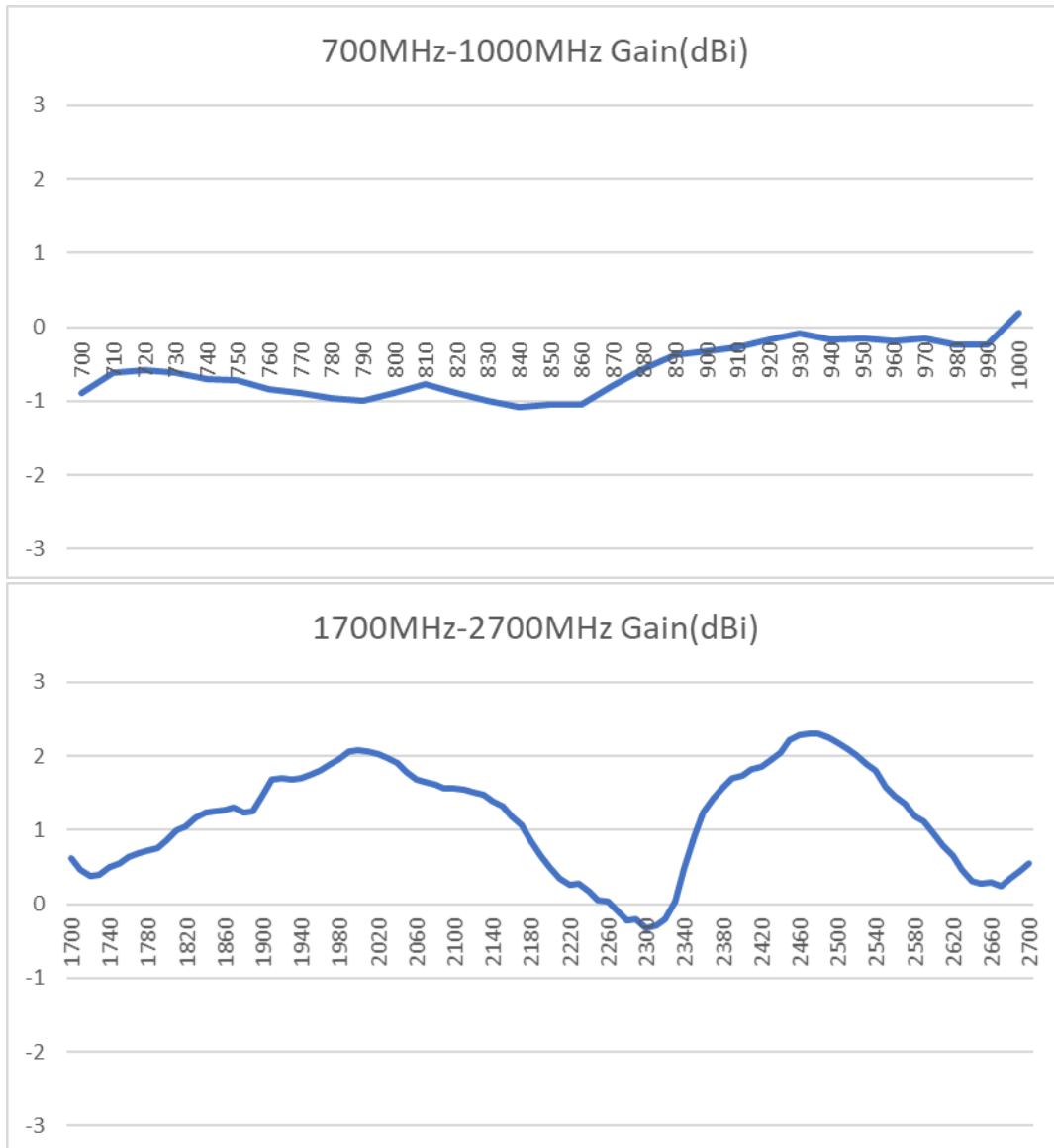
Frequency (MHz)	700	824	960	1710	2170	2400	2690
VSWR	1.64	1.15	1.33	1.51	1.53	1.97	1.41

### 4.3. Efficiency



Frequency (MHz)	700	820	960	1710	2170	2400	2690
Efficiency (%)	40.80	35.23	29.55	43.77	48.80	49.78	75.45

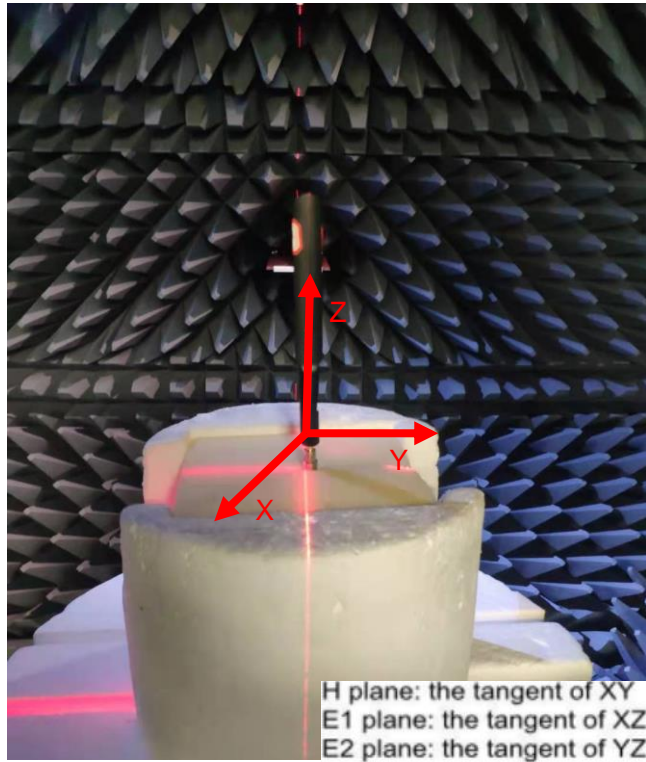
### 4.4. Gain



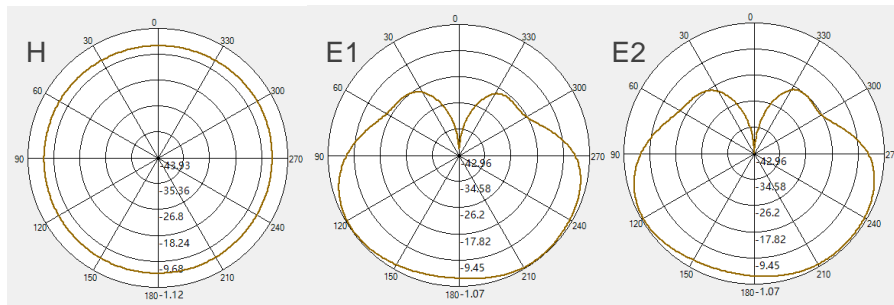
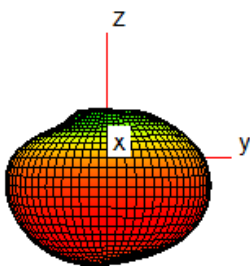
<b>Frequency (MHz)</b>	700	820	960	1710	2170	2400	2690
<b>Gain (dBi)</b>	-0.89	-0.89	-0.19	0.46	1.06	1.74	0.44

FCC Band		
Band	Frequency (MHz)	Gain (dBi)
Band 2	1850 - 1910 MHz	1.68
Band 4	1710 - 1755 MHz	0.56
Band 5	824 - 849 MHz	-1.00
Band 12	699 - 716 MHz	-0.62
Band 13	777 - 787 MHz	-0.96
Band 25	1850 - 1915 MHz	1.68
Band 26	814 - 849 MHz	-0.90
Band 66	1710 - 1780 MHz	0.72
Band 85	698 - 716 MHz	-0.62

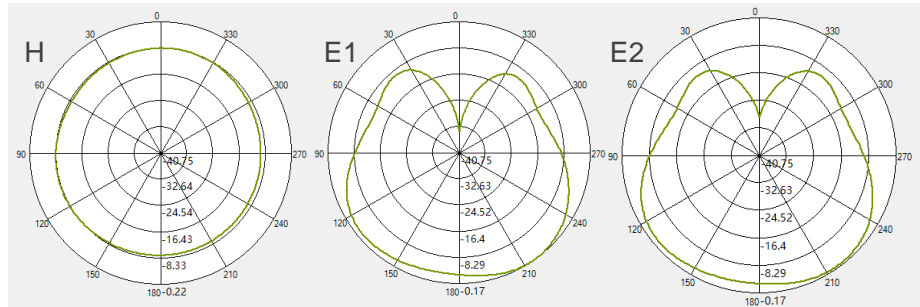
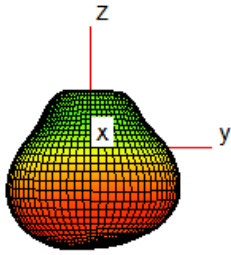
### 4.5. Radiation Pattern



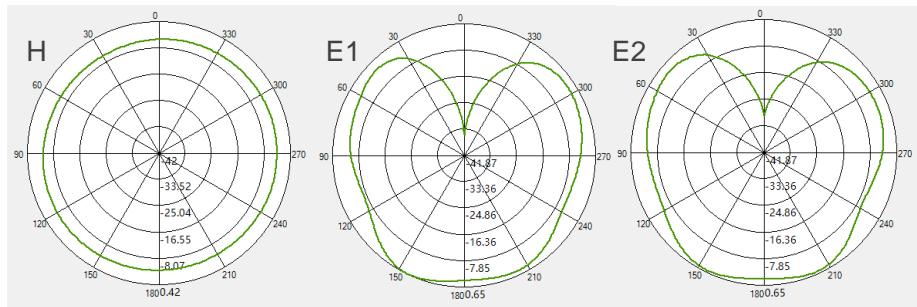
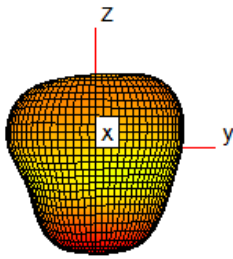
#### 4.5.1. 850 MHz



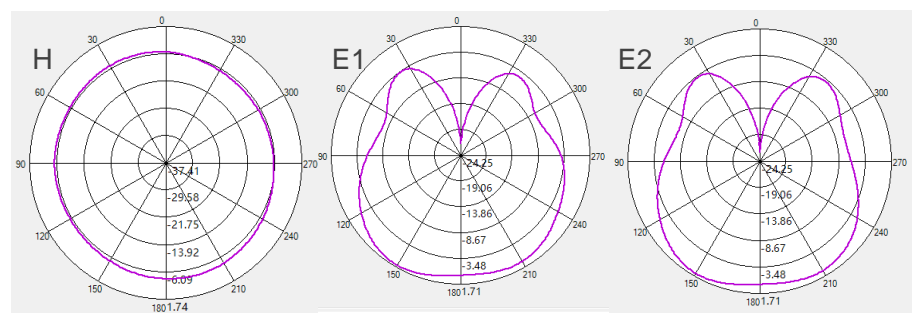
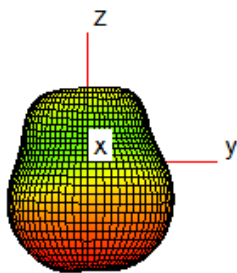
**4.5.2. 960 MHz**



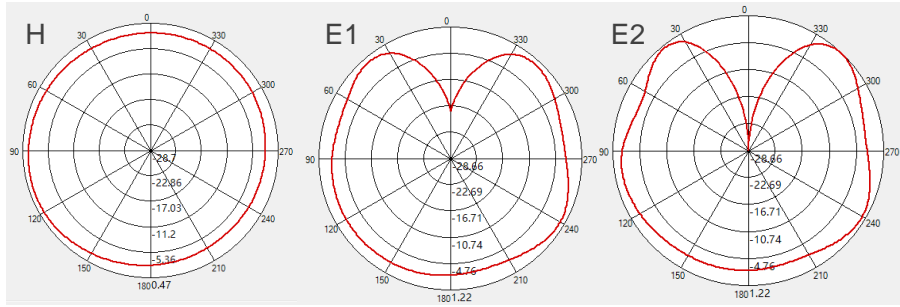
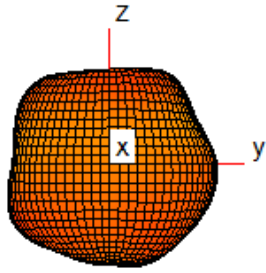
**4.5.3. 1710 MHz**



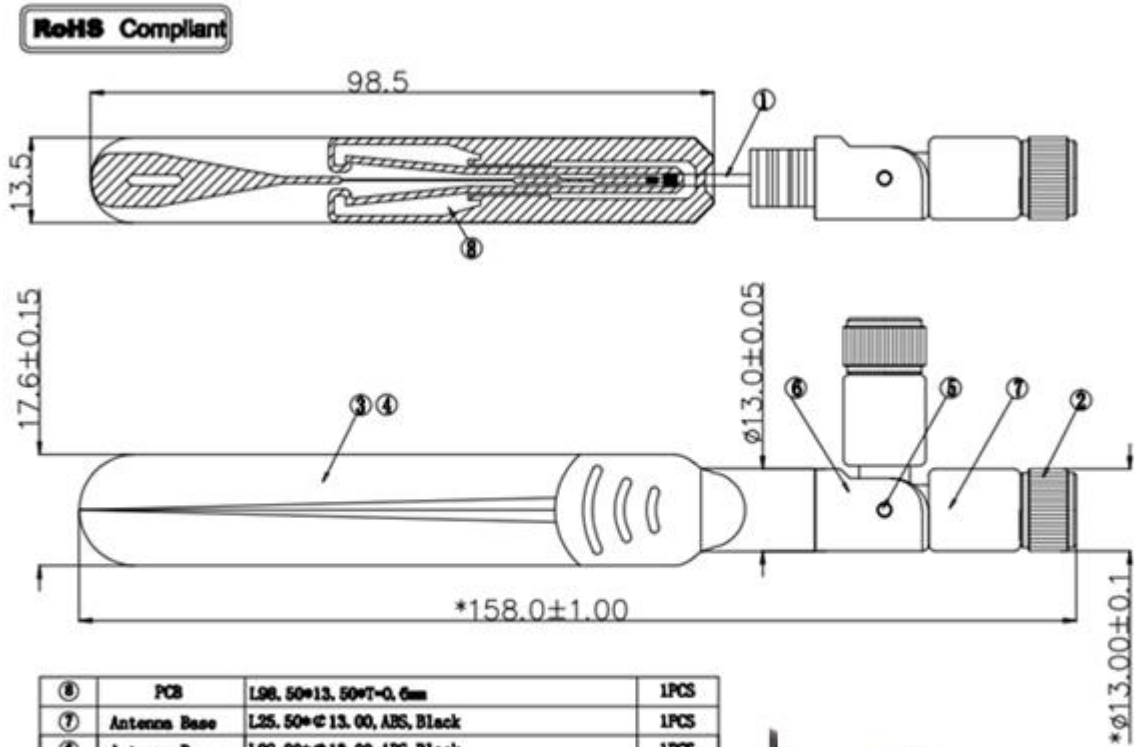
**4.5.4. 2400 MHz**



**4.5.5. 2690 MHz**



## 5 Product Size



⑧	PCB	L98.50*13.50*0.6mm	1PCS
⑦	Antenna Base	L25.50*13.00, ABS, Black	1PCS
⑥	Antenna Base	L28.20*13.00, ABS, Black	1PCS
⑤	Rivet	L5.10*2.40, POM, Black	2PCS
③④	Antenna Housing	L116.00*13.0*17.60, ABS, Black	1PCS
②	CONN	SMA PLUG STRIGHTING, 13.0*6.8*17.5	1PCS
①	Cable	RG-178 Cable, PTFE	1PCS
NO	PARTNAME	DESCRIPTION	Q'TY

